# Regional Mobility Grant
# Performance Measurement Plan
# GCA XXXX Union Park & Ride

Our grant application discussed that the existing Union Park-and-Ride lot has traditionally been very popular. The original lot has 242 spaces and our monthly utilization counts indicate that regularly there are more vehicles parked at this lot than the number of designated spaces. Once the spaces are full, customers park adjacent to landscape islands, along curbs and in other areas not designed for parking.

The current expansion project adds approximately 200 additional spaces to this location by developing the unused land to the south of the existing lot. It also provides pedestrian connections, a new traffic signal, and other improvements to encourage transit ridership.

The performance for this project will be measured by reviewing the monthly utilization at the Union park and ride lot and calculating a reduction in vehicle trips and vehicle miles traveled. This information will be provided at the end of each calendar year for the years 2010, 2011, 2012, and 2013 to comply with the grant funding agreement.

There are nine bus routes that serve the Union P&R lot. The following table looked at AM and mid day boarding activity for the same reporting period of two consecutive years (Spring 2008 and Spring 2009) and then averaged the data.

| **Route** | **Main Destination** | **Spring 2009 AM ons** | **Spring 2008 AM ons** | **Average** |
|---|---|---|---|---|
| 136 | Juno | 9 | 6 | 7 |
| 137 | Downtown Magladen | 16 | 20 | 18 |
| 138 | Juno | 3 | 5 | 4 |
| 155 | Downtown Coronach | 30 | 41 | 36 |
| 157 | Downtown Coronach | 3 | 4 | 3 |
| 211 | Downtown Coronach | 99 | 113 | 106 |
| 242 | Downtown Magladen | 21 | 21 | 21 |
| 435 | Downtown Magladen | NA | NA | NA |
| 1052 | Wales | 6 | 10 | 8 |
| TOTAL | | | | 203 |

This data was used to calculate the percentage of riders that were traveling to the four main destinations. These destinations are Coronach, Magladen, Wales and Juno.

- Average going to downtown Coronach: 71%
- Average going to downtown Magladen: 19%
- Average going to Wales: 4%;
- Average going to Juno: 5%

In addition to the ridership information we made the following assumptions.

- Each parked car represents an unknown number of bus or rideshare patrons equal to or greater than one.
- An unknown number of those parking either rideshare or use Rt 435. (no ridership data was available)
- An unknown number of riders walk to the P&R stops or are dropped off.
- Since Wales workers generally arrive early, they are currently unrestricted (have full access) and their number would not increase with the lot expansion.
- Travel to Juno is small in both utilization and miles traveled, therefore assumed the majority of the trips are to Coronach and Magladen.

We then calculated:

- Approximate one way miles, P&R to downtown Coronach: 17.6 (35.2 round trip)
- Approximate one way miles, P&R to downtown Magladen: 9.2 (18.4 round trip)

For the monitoring plan, each year we will compute the average utilization at the lot. From this we will subtract 242 (number of existing spaces). This calculation assumes that without the expansion the existing lot would remain at capacity.

Example

If we assume that of the 200 spaces added they are 80 percent utilized with 75 percent of the riders going to Coronach and 25 percent going to Magladen, then the daily miles saved would be calculated as follows.

(.80 x 200 x .75 x 35.2) + (.8 x 200 x .25 x 18.4) = 4224 + 735 = 4960 daily miles saved by the added stalls.

Annualized, this would be 4960 x 260 = 1,289,600 or 1.3M annual miles.

Using the suggested formula provided by WSDOT we calculate

:
Vehicle Trips Reduced = (((% Utilization) * (Capacity)) – ((% Baseline Utilization) * (Baseline Capacity))) * (2 trips per day) * (260 days per year)
and
Vehicle Miles Traveled Reduced = (Vehicle Trips Reduced) * (Average One-Way Trip Length in miles)

With the following assumptions:

- Assume % utilization is 100% of the 242 existing stalls and 80% of the ~200 new stalls = 91%
- Assume we accept their assumption of 52 Saturdays and 53 Sundays per year, yielding 260 weekdays.
- Assume the average one-way trip length at (.75 x 17.6) + (.25 x 9.2) = 15.5 mi.

Vehicle trips reduced = ((.91 x 442) – (1.0 x 242)) x (2 x 260) = 160.2 x 520 = 83,314 annual trips
Vehicle mile traveled reduced = 83314 x 15.5 = 1,291,367 = 1.3M annual miles

This information would be reported annual as previously discussed.